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[ABSTRACT]

In a method for homogeneously and dust-free coating of a phosphor or a scintillator layer onto a flexible substrate, in order to obtain a plurality of phosphor or scintillator sheets or panels having flexible supports or substrates, a coating procedure within a sealed zone is performed, wherein said zone comprises at least two cylindrical carrier rollers for carrying a flexible substrate exceeding dimensional formats of desired phosphor or scintillator sheets or panels with a factor of at least 5, wherein said cylindrical carrier rollers each have an axis in a parallel arrangement with one another; wherein said zone comprises at least one crucible containing a mixture of raw materials providing desired phosphor or scintillator compositions for said layer; and wherein said zone comprises a laminating unit; wherein said method comprises the steps of mounting said flexible substrate onto said carrier rollers, vapor depositing said phosphor or scintillator layer having a desired phosphor or scintillator composition onto said flexible substrate, and laminating said phosphor or scintillator layer, thereby covering said layer with a protective foil; further comprising the step of cutting said layer into sheets or panels having desired formats, and wherein at least during said vapor depositing step said zone is maintained under vacuum conditions as a vacuum chamber.